

# Audit

# Report



OFFICE OF THE INSPECTOR GENERAL

**QUICK-REACTION REPORT ON THE ACQUISITION  
PROCEDURES FOR THE TRIDENT II (D-5) MISSILE**

Report Number 93-001

October 1, 1992

This special version of the report has been revised to omit contractor sensitive data.

DTIC QUALITY INSPECTED 2

**Department of Defense**

**DISTRIBUTION STATEMENT A**  
Approved for Public Release  
Distribution Unlimited

20000522 092

AGI 60-08-2688

**The following acronyms are used in this report.**

D-5.....	Trident II (D-5) Sea Launched Ballistic Missile
DCMC.....	Defense Contract Management Command
DFARS.....	Defense Federal Acquisition Regulation Supplement
DPRO.....	Defense Plant Representative Office
FAR.....	Federal Acquisition Regulation
GFM.....	Government-Furnished Material
SSPO.....	Strategic Systems Program Office



**INSPECTOR GENERAL  
DEPARTMENT OF DEFENSE  
400 ARMY NAVY DRIVE  
ARLINGTON, VIRGINIA 22202-2884**

October 1, 1992

**MEMORANDUM FOR ASSISTANT SECRETARY OF DEFENSE (PRODUCTION AND LOGISTICS)  
COMPTROLLER OF THE DEPARTMENT OF DEFENSE  
ASSISTANT SECRETARY OF THE NAVY (FINANCIAL MANAGEMENT)  
DIRECTOR, DEFENSE LOGISTICS AGENCY**

**SUBJECT: Quick-Reaction Report on the Acquisition Procedures for the Trident II (D-5) Missile (Report No. 93-001)**

We are providing this final report for your information and use. This report resulted from our audit of the Trident II test and evaluation plan. This is the first of two reports issued on the Trident II (D-5) missile program. Comments from the Office of the Comptroller of the Department of Defense and the Defense Logistics Agency on a draft of this report were considered in preparing the final report.

DoD Directive 7650.3, requires that all audit recommendations be resolved promptly. Therefore, we request comments from the Assistant Secretary of Defense (Production and Logistics), the Comptroller of the Department of Defense, the Assistant Secretary of the Navy (Research, Development and Acquisition), and the Navy Strategic Systems Program Office on the unresolved recommendations by October 30, 1992. The DoD Directive 7650.3 also requires that comments indicate concurrence or nonconcurrence in the finding and each recommendation addressed to you. If you concur, describe the corrective actions taken or planned, the completion dates for actions already taken, and the estimated dates for completion of planned actions. If you nonconcur, you must state your specific reasons for each nonconcurrence. If appropriate, you may propose alternative methods for accomplishing desired improvements. If you nonconcur with the estimated monetary benefits or any part thereof, you must state the amount you nonconcur with and the basis for your nonconcurrence. Recommendations are subject to resolution in accordance with DoD Directive 7650.3 in the event of nonconcurrence or failure to comment.

The courtesies extended to the audit staff are appreciated. If you have any questions on this report, please contact Ms. Patricia A. Brannin at (703) 692-3206 (DSN 222-3206) or Ms. Macie J. Rubin at (703) 692-3222 (DSN 222-3222). The report distribution is listed in Appendix E.



Robert J. Lieberman  
Assistant Inspector General  
for Auditing

cc:  
Secretary of the Navy  
Director of Defense Procurement

---

This special version of the report has been revised to omit contractor sensitive data.

**Office of the Inspector General, DoD**

**AUDIT REPORT NO. 93-001**  
(Project No. 2CD-0018.01)

October 1, 1992

**QUICK-REACTION REPORT ON THE ACQUISITION  
PROCEDURES FOR THE TRIDENT II (D-5) MISSILE**

**EXECUTIVE SUMMARY**

**Introduction.** Trident II (D-5) missile production began in December 1987. The Navy deployed its first operational D-5 sea launched ballistic missile on March 23, 1990. The program has had six production buys through 1992 procuring 298 missiles. The Navy is negotiating with the prime contractor for the FY 1993 production contract with an anticipated contract award date of October 1, 1992.

**Objective.** The audit objective was to determine if the Navy Strategic Systems Program Office used the most efficient method for buying the D-5 missile.

**Audit Results.** The D-5 production contracts were not being procured in a cost-efficient manner. The Navy program office can purchase the D-5 missile motors directly from the manufacturers and reduce costs by \$113 million for FYs 1993 through 1998 and about \$312 million over the life of the program. Further cost reductions can be realized by allowing the Defense Plant Representative Office to handle all contract administrative services, and by eliminating duplicate program office contract oversight functions. In addition, although 298 missiles were already procured, the SSPO has continued to use cost-plus-incentive-fee contracts instead of fixed-priced contracts that are normally more cost efficient and used on programs with a production history.

**Internal Controls.** Our review of internal controls was limited to the controls for the procurement and administration for the D-5 missile program. We did not identify any material control weaknesses. The controls assessed are further discussed in Part I of the report.

**Potential Benefits of Audit.** Potential monetary benefits of about \$113 million can result if the Navy implements the recommendations on component breakout. We are only claiming \$77 million of the \$113 million in potential benefits because a prior audit report addressed monetary benefits related to improved component breakout for FYs 1993 and 1994 (Appendix A). We calculated that potential monetary benefits of about \$10 million annually can result from elimination of duplicate

contract oversight functions. However, we have not claimed the potential monetary benefits related to the elimination of duplicate contract oversight functions because of the difficulty of determining the exact amount of duplication of effort that can be eliminated. Other unquantifiable benefits will also result from use of fixed-price production contracts (See Appendix B).

**Summary of Recommendations.** We recommended buying missile motors directly from the manufacturer and changing to a fixed-price contract. We also recommended that a joint effort be made to identify and reduce duplication of oversight at contractors' facilities. We further recommended that appropriate adjustments be initiated during the budget review process.

**Management Comments.** The Office of the Comptroller of the Department of Defense commented that the savings calculation for breaking out procurement of missile motors should be revised based on the President's budget, which has been done. The Defense Contract Management Command agreed with the need to eliminate duplicative contractor oversight. The Assistant Secretary of Defense (Production and Logistics), and the Navy did not provide written comments. The full discussion of the management comments is included in Part II of the report, and the complete text of the management comments is in Part IV of the report.

We request that the Assistant Secretary of Defense (Production and Logistics) comment on Recommendation B.1, the Comptroller of the Department of Defense comment on Recommendation B.2., and the Navy comment on Recommendations A. and C. by October 30, 1992.

## TABLE OF CONTENTS

	<u>Page</u>
TRANSMITTAL MEMORANDUM	1
EXECUTIVE SUMMARY	i
PART I - INTRODUCTION	
Background	1
Objective	1
Scope	1
Internal Controls	2
Prior Audit Coverage	2
PART II - FINDINGS AND RECOMMENDATIONS	
A. Missile Motor Breakout	5
B. Oversight at Contractors	9
C. Cost-Plus-Incentive-Fee Contracts for Production	13
PART III - ADDITIONAL INFORMATION	
APPENDIX A - Component Breakout Monetary Benefits	19
APPENDIX B - Summary of Potential Benefits Resulting from Audit	21
APPENDIX C - Prior Audit Reports	23
APPENDIX D - Activities Visited or Contacted	25
APPENDIX E - Report Distribution	27
PART IV - MANAGEMENT COMMENTS	
Comptroller of the Department of Defense	31
Defense Logistics Agency	33

This report was prepared by the Contract Management Directorate, Office of the Assistant Inspector General for Auditing, DoD. Copies of final report can be obtained from the Information Officer, Audit Planning and Technical Support Directorate, (703) 614-6303.

## PART I - INTRODUCTION

### Background

On October 2, 1981, the Secretary of Defense directed the Navy to fund an advanced development program for the Trident II (D-5) Sea Launched Ballistic Missile. The program plan to achieve initial operational capacity by late 1989 was met and the first operational missile was deployed on March 23, 1990. The D-5 is a three-stage, solid propellant, inertially guided fleet ballistic missile, which is launched underwater from Trident submarines. Each Trident submarine is capable of launching 24 missiles. Missile production began in 1987, and the original acquisition plan called for a procurement of 844 missiles at a cost of \$26.1 billion. The program, which has had six production buys through 1992, has procured a total of 298 missiles. The D-5 missile program is managed by the Navy Strategic Systems Program Office (SSPO).

SSPO has issued a Request for Proposal for the FY 1993 procurement, the seventh production buy of the missile. Lockheed Missile and Space Company (Lockheed) has submitted a proposal, and negotiations are currently in process with an anticipated award date of October 1, 1992.

### Objective

The audit objective was to evaluate the efficiency of the Trident II (D-5) missile operation test and evaluation plan. During our review of missile costs, we found no evidence of component breakout reviews and expanded our objectives to include the contracting methods used to procure the missile. This audit report addresses the acquisition methods used to procure the missile. A later audit report will address the D-5 test and evaluation and the internal controls as they applied to test and evaluation. We are issuing this quick-reaction report in order to have the recommendations concerning missile motor breakout (Finding A) and cost-plus-incentive-fee contracts for production (Finding C) implemented before conclusion of the ongoing negotiations for the seventh production contract.

### Scope

We reviewed the contracting procedures for contract N00030-92-C-0092 that the SSPO used to procure the D-5 missile for FY 1991 and FY 1992. Our review included the type of contracts the SSPO used for the different stages of the program, profit analyses, and competition procedures.



We reviewed the acquisition plans for evidence that a component breakout analysis was performed in accordance with Federal Acquisition Regulation (FAR) part 7.105, "Contents of Acquisition Plan," and Defense Federal Acquisition Regulation Supplement (DFARS) Appendix D, "Component Breakout." Further, we reviewed Business Clearance Memorandums for the profit and incentive fee rates for FY 1991 and FY 1992 and contracting officers' Determination and Findings for contract-type information. We also reviewed documentation and discussed with cognizant personnel the oversight functions of the SSPO technical representatives at the prime and subcontractor facilities.

We reviewed the "Department of the Navy, Weapons Procurement Navy, Budget Activity" for FY 1990 through FY 1999 to determine anticipated future quantities and costs.

This economy and efficiency audit was performed from March through June 1992, in accordance with auditing standards issued by the Comptroller General of the United States, as implemented by the Inspector General, DoD. Accordingly, we included such tests of internal controls as were considered necessary. We did not rely on any computerized data to perform the audit. The activities visited or contacted are listed in Appendix D.

#### Internal Controls

Our review of internal controls was limited to the controls for the procurement and administration of the D-5 missile program. Therefore, we are expressing no opinion on the adequacy and compliance of the internal controls for procurement and administration of other weapon systems. Specifically, we reviewed Navy procedures to ensure that component breakout reviews were performed. We also reviewed Federal policy and procedures for evaluating contract administration and program management office functions. No material internal control weaknesses were found.

#### Prior Audit Coverage

Since 1987, 20 audit reports have been issued that address Component Breakout. The reports primarily addressed the need to perform component breakout on a specific system. The reports are listed in Appendix C. The Inspector General, DoD, Audit Report No. 91-018, "Component Breakout Program for Major Systems," December 15, 1990, showed that the Services and program managers frequently did not comply with the DoD requirement to perform component breakout reviews and did not aggressively pursue component breakout on major systems. The audit showed the Services either lacked guidance or did not follow policies and procedures for monitoring breakout efforts. The audit also found that DoD and the Services had not established clearly defined

objectives for the Component Breakout Program, and DoD guidance was unclear and incomplete. The report stated that about \$2.36 billion of potential monetary benefits for FYs 1991 through 1994 can result from performing component breakout on 72 major systems. The report recommended that the Under Secretary of Defense for Acquisition require program managers to perform and document Component Breakout reviews as part of their system acquisition strategy and to include detailed guidance on the approach to complete the breakout analysis.

In a memorandum, dated August 9, 1990, the Under Secretary of Defense for Acquisition implemented the recommendations stating that DoD must eliminate unnecessary costs in the acquisition programs and breakout system components for procurement directly from actual manufacturers, whenever it makes good business sense. However, we found that the SSPO had not complied with these requirements. Similar recommendations are made in Finding A of this report.

The Inspector General, DoD, Inspection Report No. 92-INS-04, "Contractor Oversight in the Department of Defense," January 7, 1992, identified duplication of contract administration functions between program office technical representatives and the newly formed Defense Plant Representative Office (DPRO) at contractor facilities. The report recommended that the Under Secretary of Defense for Acquisition direct the Military Departments and the Defense Logistics Agency to establish a plan of action and milestones for the orderly transfer of all on-site technical representative assets to the newly formed Defense Contract Management Command (DCMC). The Air Force partially concurred, and the Army and Navy nonconcurred with the Inspection Report recommendation. The DCMC was attempting to work this out with the Office of the Navy Service Acquisition Executive as of August 20, 1992.

This page was left out of original document

## PART II - FINDINGS AND RECOMMENDATIONS

### A. MISSILE MOTOR BREAKOUT

The SSPO did not consider D-5 missile motors for breakout or perform reviews to assess the benefits versus risk. The reviews were not performed primarily because senior command officials believed there was less risk when the prime contractor provided the entire system and was responsible for delivery and program performance of the system. As a result, the Government will pay the prime contractor about \$113 million over the next 6 years to administer the subcontracts for missile motors. The potential benefits of procuring the D-5 missile motors directly from the manufacturer could exceed \$312 million from FY 1993 through FY 2008.

### DISCUSSION OF DETAILS

#### Background

Component breakout is when the Government purchases directly from the original equipment manufacturer a subsystem, assembly, or subassembly that was previously procured through the prime contractor. The Government then provides the component to the prime contractor as Government-Furnished Material (GFM). Component breakout decreases costs to the Government by eliminating surcharges for overhead and profit added by the prime contractor. The program office is responsible for component breakout reviews and decisions.

FAR Part 7.105, "Contents of Written Acquisition Plans," requires that the acquisition plan identify the major components or subsystems and discuss component breakout plans relative to these major components or subsystems. DFARS Appendix D, "Component Breakout," requires that any decision regarding breakout of a component must include an assessment of the potential risks of delayed delivery and reduced reliability of the component; a calculation of estimated net cost savings (estimated acquisition savings less any offsetting costs); and an analysis of the technical, operational, logistical, and administrative factors. The DFARS also requires that activities maintain documentation on breakout reviews performed. The documentation on breakout reviews should include a list of components reviewed, components that have no potential for breakout, components susceptible to breakout, and components for which a decision to breakout has been made.

#### Components for Breakout Consideration

The SSPO contracted with Lockheed to manage the assembly of the D-5 missile. Lockheed also subcontracts the propulsion system,

which consists of three stages of missile motors. The first and second stage motors are manufactured as a joint venture between Hercules Missile, Ordinance and Space Company (Hercules) and Morton-Thiokol, Incorporated (Thiokol). The third stage motor is manufactured independently by United Technologies Corporation/Chemical System Division (United Technologies). The missile motors are shipped from the subcontractor plants to the Strategic Weapons Facility, Atlantic, the site where they are assembled with other components that comprise the missile. Lockheed adds no hardware to the motors; but as fleet propulsion manager for the motor, it provides contract administration, oversight, engineering support and quality assurance inspection representatives. We have identified missile motors for component breakout because of the reliability of the motors and the contractors' performance.

Missile motor performance. The FY 1993 D-5 missile procurement will be the seventh production buy for the program. The results of over 50 test flights for program evaluation, demonstration and shakedown operation, research and development, and operational test proved that the D-5 missile has performed well and is reliable. In its request for proposal for the FY 1993 buy, SSPO stated that this buy will be negotiated consistent with the reduced risk of a mature production plan. There have been few problems with the motors, which in our opinion, indicates there is only a small chance for further design or engineering effort by the end item contractor. Further, SSPO has paid \* \* in performance incentives for the first production contract. The incentives are for reliability, accuracy, range, and quality. The missile motor contractors share in these incentives and have received the maximum incentives for the last three contracts. This too is an indication that the missile motors are reliable.

Missile motor contractors. The three missile motor contractors, Hercules, Thiokol, and United Technologies, have been manufacturing motors for the Army, Navy, Air Force, and the National Aeronautics and Space Administration for over 30 years. For example, Hercules currently has contracts to manufacture motors for Trident II, Peacekeeper, Delta II, Pegasus, and Titan IV Solid Rocket Motor Upgrade. Hercules provides the Peacekeeper missile motors as a prime contractor. The Air Force runs a successful Peacekeeper program, and the missile motors are an important aspect of that program. Providing the motors as GFM did not fragment administration, management, performance, or delay deliveries of the end item and is cost-effective, according to the Air Force.

---

\* Contractor confidential or proprietary data has been deleted

### Monetary Benefits

We estimated that about \$113 million in procurement funds could be put to better use in FYs 1993 through 1998 (See Appendix A). These estimated monetary benefits are based on the elimination of prime contractor overhead and fee and take into consideration the existing staffing for oversight that could be used for procurement and program management functions. Lockheed is paid overhead and fee to administer the missile motor contracts. We used the negotiated FY 1992 overhead and fee and budget information supplied by SSPO to compute the estimated potential monetary benefits if the missile motors were provided as GFM. We computed missile motor cost based on the FY 1992 negotiated contract at \* \* per unit and escalated the unit cost by 3.3 percent. We multiplied this cost by the overhead and fee. We also eliminated the cost of the 30 engineers that Lockheed provided using a GS-12 average salary and fringe benefit of 38.7 percent.

Potential benefits of \$312 million can be projected from FYs 1993 through 2008, the projected end of the D-5 missile procurement, if the missile motors are provided as GFM. These potential benefits reflect missile procurement costs and do not address the costs of eliminating engineers claimed in FYs 1993 through 1998.

We are only claiming \$77 million of the \$113 million in potential benefits because Inspector General, DoD, Report No. 91-018 "Component Breakout for Major Systems," December 5, 1990, addresses monetary benefits related to improved component breakout for FYs 1993 and 1994.

### Conclusion

The SSPO Program Manager for the D-5 missile did not want to break out the missile motors because the Government would then be responsible for the delivery and performance of the motors. The Government would also be subjected to claims from the prime contractor for missile bodies and integration of the missile components if the motors were not delivered on time or did not perform properly. The Program Manager preferred this to be the prime contractor's responsibility. Although it is true that if the motors are broken out the Government assumes responsibility for timely delivery and reliable performance, we do not believe that this is sufficient reason not to break out the D-5 missile motors. SSPO already provides major missile components as GFM, such as the guidance and control section. Also, the reliability of the motors as evidenced by the performance fees earned by the contractors attests to the minimum risk associated with performance of the motors. We found no indications that the

---

\* Contractor confidential or proprietary data has been deleted

timely delivery of the motors was considered a problem. In addition, the contracts with motor contractors can include incentives or provisions to ensure timely delivery.

RECOMMENDATIONS, MANAGEMENT COMMENTS, AND AUDIT RESPONSE

We recommend that the Assistant Secretary of the Navy (Research, Development, and Acquisition) direct the Director, Strategic Systems Programs Office to procure the Trident II missile motors directly from the manufacturer and provide them as Government-Furnished Material to the prime contractor.

Management comments. The Assistant Secretary of the Navy (Research, Development, and Acquisition) did not provide written comments to the draft report. Although not required to comment on this recommendation, the Office of the Comptroller of the Department of Defense stated that the estimates of monetary benefits for breaking out procurement of missile motors on a procurement program of 48 missiles per year exceeded the President's budget (Part IV).

Audit response. We request the Assistant Secretary of the Navy (Research, Development, and Acquisition) provide written comments to the final report by October 30, 1992. The estimate of monetary benefits for breakout procurement of missile motors was revised to reflect the procurement quantities of D-5 missiles in the President's budget.

## **B. OVERSIGHT AT CONTRACTORS**

The SSPO and the DCMC provided excessive oversight in the D-5 missile program because both performed technical oversight and contract administration functions at Lockheed the prime contractor. In addition, SSPO, DCMC, and Lockheed performed these technical oversight and contract administration functions at the subcontractor facilities of Hercules and Thiokol. This excessive oversight resulted in potential duplication of effort and could affect Lockheed's responsibility as the prime contractor.

### **DISCUSSION OF DETAILS**

#### **Defense Management Report Decision**

A Defense Management Report Decision entitled "Streamlining Contract Management," proposed the consolidation of DoD contract management either in a defense contract management agency or under the Defense Logistics Agency. On February 6, 1990, the Deputy Secretary of Defense directed the consolidation of all contract administration functions in the DCMC, as part of the Defense Logistics Agency. On June 30, 1990, the DCMC was to assume the full range of contract administrative services described in the FAR and DFARS, including program support. Two of the purposes were to reduce cost and to present one face of Government to industry.

#### **Oversight at Contractor Sites**

In reviewing missile motor breakout, we found that SSPO technical representatives, as well as the DPRO personnel, were performing oversight functions at both the prime and subcontractor facilities. According to DCMC correspondence, there are 123 SSPO personnel and 146 DPRO personnel on-site at Lockheed, 43 SSPO personnel and 59 DPRO personnel at Hercules, and 6 SSPO personnel and 138 DPRO personnel at Thiokol (the number of SSPO on-site personnel listed is based on DCMC estimates). The SSPO personnel performing the oversight functions are technical representatives. Such a significant number of program office personnel violates the intent of the Defense Management Review Decision, causes confusion for the contractor, and raises the questions of whether the Navy or DPRO personnel has jurisdiction and authority. This results in a duplication of oversight, direction, staffing, and limits the ability of the DPRO to perform its functions in an objective manner. A potential exists that Lockheed's responsibilities as the prime contractor could be assumed by the SSPO in meetings, decisions, and initiatives with respect to technical and program oversight.



### Other Contractors and DoD Programs

The SSPO has technical representatives at six contractor sites for the D-5 program. The SSPO representatives at Lockheed, Sunnyvale, California; and Hercules, Magna, Utah; are addressed in the prior paragraph. SSPO technical representatives and DCMC contract administrative personnel are also at General Electric Company, Ordnance Systems Department, Pittsfield, Massachusetts; Rockwell International Corporation, Autonetics Division, Anaheim, California; Paramex Systems Corporation (formerly Unisys Corporation) Great Neck, New York; and Westinghouse Electric Corporation, Sunnyvale, California.

In addition, Hercules is currently on contract to produce missile motors for four major defense programs. Three of these programs are Air Force and one is Navy. One additional Air Force contract was recently canceled (the Small Intercontinental Ballistic Missile), and the Army Pershing program is now complete. The Navy is the only program with 43 on-site Government technical representatives. The Army and the Air Force rely on DCMC personnel for contract administration for programs with Hercules.

### Working Group

As of May 1991, the Navy had 504 technical representatives at contractor facilities. Of this amount, 311 (or about 60 percent) of these representatives were assigned to SSPO. At the time of the audit, a Navy working group was addressing the technical representative issue. This working group was studying the functions of the technical representatives at contractor facilities. The working group planned to meet with DCMC to resolve the on-going issue of duplication of contract administrative functions at contractor facilities where there is a DPRO. At the time of our audit, the working group had no milestones for completing its work. Because of the significant number of technical representatives, we believe that the Office of the Assistant Secretary of Defense (Production and Logistics) should take immediate action to eliminate the potential for duplication between DCMC contract administration offices and SSPO technical representatives.

### Illustration of Benefits

The estimated 123 SSPO personnel assigned to Lockheed and 43 SSPO personnel assigned to Hercules perform legitimate program and technical oversight functions. Additionally, the SSPO personnel assigned, perform contract administration functions that should be delegated to the cognizant DPROs. By delegating all contract administration functions to DPROs and eliminating duplication, there would be a reduction of some magnitude in the cost of

performing oversight and contract administration. For example, if all 166 SSPO technical support personnel were eliminated, potential cost reductions could be \$10 million per year.<sup>1/</sup> Because of the significant amount of monetary benefits that could result from consolidating contract administrative functions and eliminating duplication, it is imperative that the exact number of personnel required to perform these functions be determined and the functions, along with the personnel resources required, be transferred from SSPO to the DPROs, consistent with the intent of the Defense Management Review Decision.

#### RECOMMENDATIONS, MANAGEMENT COMMENTS, AND AUDIT RESPONSE

1. We recommend that the Assistant Secretary of Defense (Production and Logistics) direct the Strategic Systems Program Office and Defense Contract Management Command to jointly:

a. Determine the contract administrative functions currently being performed by Strategic Systems Program Office technical representatives.

b. Determine the exact number of work years currently required by Strategic Systems Program Office technical representatives to perform their functions.

c. Effect the transfer of all contract administrative functions and resources (personnel) from Strategic Systems Program Office to the cognizant Defense Plant Representative Offices consistent with the intent of the Defense Management Report.

d. Assess the number of technical representatives required to perform the noncontract administrative program and technical oversight function to keep the total on-site Strategic Systems Program Office personnel at the minimum necessary.

Management comments. The Assistant Secretary of Defense (Production and Logistics) did not provide comments to this recommendation. However, the Deputy Director of the DCMC, Defense Logistics Agency, provided additional clarifying

---

<sup>1/</sup> The savings are based on an average GS-12, step 4 salary plus a fringe benefit rate of 38 percent. We used the GS-12 level because it was the average grade level for the technical representative. The 38-percent fringe benefit rate was provided by Office of Management and Budget Circular A-76 dated August 8, 1988.

information (Part IV). The Deputy Director recommended that all contract administrative functions be transferred from the SSPO to DCMC consistent with the Defense Management report.

**Audit response.** We request that the Assistant Secretary of Defense (Production and Logistics) provide written comments to the revised recommendation to the final report by October 22, 1992. We incorporated relevant comments that the DCMC provided, which included rewording of Recommendation 1. for clarity. The intent of Recommendation 1, however, remains the same.

2. We recommend that the Comptroller of the Department of Defense initiate appropriate adjustments during the budget review process to realign and reduce work years, as appropriate, between the Navy and Defense Logistics Agency in order for the Defense Contract Management Command to assume total control of contract administration at Lockheed, Hercules, General Electric Company, and Westinghouse Electric Corporation.

**Management comments.** The Comptroller of the Department of Defense did not provide comments on the recommendation.

**Audit response.** We request that the Comptroller of the Department of Defense provide comments on the final report by October 30, 1992.

### C. COST-PLUS-INCENTIVE-FEE CONTRACTS FOR PRODUCTION

The SSPO awarded six production contracts for the D-5 missile using a cost-plus-incentive-fee contract. The SSPO stated that sufficient cost data did not exist to permit the use of a fixed-price contract. As a result, the contractor lacked an incentive to be most cost efficient.

#### DISCUSSION OF DETAILS

##### Background

The FAR subpart 16.103(c), "Negotiating Contract Type," states:

In the course of an acquisition program, a series of contracts, or a single long-term contract, changing circumstances may make a different contract type appropriate in later periods than that used at the outset. In particular, contracting officers should avoid protracted use of a cost-reimbursement or time-and-materials contract after experience provides a basis for firmer pricing.

According to FAR subpart 16.202-2 (c), the contracting officer should consider a firm-fixed-price contract when a contracting officer can establish a reasonable and fair price at the outset and when available cost or pricing information permits realistic estimates of the probable costs of performance.

The FAR Subpart 16.202-1, "Firm-Fixed-Price Contracts," states:

This contract type places upon the contractor maximum risk and full responsibility for all costs and resulting profit or loss. It provides maximum incentive for the contractor to control costs and perform effectively and imposes a minimum administrative burden on the contracting parties.

##### Contract Type

The contracting officer executed waivers to the FAR to allow the use of cost-plus-incentive-fee contracts for production. The waivers were given because SSPO stated that insufficient cost data existed at the time to permit the pricing of a fixed-price-type contract. We disagree that a lack of actual cost data existed based on the D-5 contract history as discussed below.

##### D-5 Contract History

The contract history of the D-5 program shows that SSPO used cost-plus-incentive-fee contracts for the six production buys for the D-5 missile. The Navy has accepted delivery of 155 missiles as follows:

<u>Contract Number</u>	<u>Missiles</u>		<u>Value of</u>	<u>Unit Cost 2/</u>
	<u>Ordered</u>	<u>Delivered</u>	<u>Contracts</u>	
N00030-84-C-0100	52	52	*	*
N00030-88-C-0088	35	35	*	*
N00030-89-C-0089	64	64	*	*
N00030-90-C-0090	44	4	*	*
N00030-91-C-0091	52		*	*
N00030-92-C-0092	<u>51</u>		*	*
Total	<u>298</u>	<u>155</u>		

SSPO, in the "Determination and Findings" document for the sixth production buy, stated that the cost of performing the work under this procurement cannot be accurately forecast to permit a fixed-price contract. However, after accepting delivery of 155 missiles, there should be enough information to accurately forecast the cost of performing the work.

#### Contract Incentives and Fee Provision

The contracting officer also obtained waivers to award cost-plus-incentive-fee production contracts with performance and cost incentives that exceed the 10 percent allowed by FAR subpart 15.903(d)(2) "Contracting Officer Responsibilities." The amount of fee and profit is based on the type and complexity of the work and the amount of risk that the contractor must assume. Technical performance incentives in production contracts are allowed when improved performance is obtainable and highly desirable to the Government. The FY 1992 contract included incentives that allow the contractor to receive a minimum fee of \* percent and a maximum fee of \* percent. With the large number of missiles delivered, awarding contracts for production with significant profit incentives for performance needs to be reevaluated.

#### Conclusion

The SSPO has continued to award cost-plus contracts despite 155 missiles already delivered. By continually awarding cost-type contracts with significant performance incentives, SSPO has not provided the contractor with the incentives to be efficient. This problem is evident by the increasing unit cost of the missile as shown on the chart above.

---

2/ Adjusted for inflation based on 3.3 percent per year.

\* Contractor confidential or proprietary data has been deleted

RECOMMENDATIONS, MANAGEMENT COMMENTS, AND AUDIT RESPONSE

We recommend that the Strategic Systems Program Office negotiate a fixed-price contract for future Trident II D-5 procurements and use current program risks to reevaluate contract performance and cost incentives.

Management comments. There were no comments from the SSPO.

Audit response. We request that the SSPO provide written comments for this recommendation by October 30, 1992.

This page was left out of original document

**PART III - ADDITIONAL INFORMATION**

APPENDIX A - Component Breakout Monetary Benefits

APPENDIX B - Summary of Potential Benefits Resulting  
from Audit

APPENDIX C - Prior Audit Reports

APPENDIX D - Activities Visited or Contacted

APPENDIX E - Report Distribution



This page was left out of original document

**APPENDIX A - COMPONENT BREAKOUT MONETARY BENEFITS**

<u>Fiscal</u> <u>Year</u>	<u>Number of</u> <u>Motors 1/</u>	<u>Motor Unit</u> <u>Costs 2/</u>	<u>Total Missile</u> <u>Motor Cost 3/</u>	<u>Total Cost Added by</u> <u>Prime Contractor 4/</u>
1993	*	*	*	*
1994	*	*	*	*
1995	*	*	*	*
1996	*	*	*	*
1997	*	*	*	*
1998	*	*	*	*
<hr/>				
Subtotal				\$102,387,743
Plus: Elimination of 30 Lockheed Engineers				10,995,300 5/
Total Savings FY 1993 through FY 1998				\$113,383,043
Less: Previously claimed monetary				
benefits - FY 1993 and 1994				(35,930,709) 6/
Total Potential Benefit FY 1995 through FY 1998				<u>\$77,452,334</u>

See following page for footnotes

**APPENDIX A - COMPONENT BREAKOUT MONETARY BENEFITS (cont'd)**

1/ Number of missile motors based on FYs 1995 through 1999 budget information.

2/ Unit cost is based on FY 1992 negotiated contract of \* \* with estimated escalation of 3.3 percent per year as provided by SSPO.

3/ Number of motors times motor unit cost.

4/ Total missile motor cost times prime contractor's overhead and fee of \* percent.

5/ This dollar amount represents the elimination of 30 Lockheed engineering positions by:

Using a GS-12 Average Salary	\$44,041
Fringe Benefits (1 plus rate)	<u>x 1.387</u>
Total salary and fringe benefits	\$61,085
Number of Lockheed Engineers	x 30
	\$1,832,550
Number of Years	<u>x 6</u>
	<u>\$10,995,300</u>

6/ Inspector General, DoD, Report No. 91-018, "Component Breakout for Major Systems," December 5, 1990, claimed savings for component breakout for FYs 1993 and 1994.

**APPENDIX B - SUMMARY OF POTENTIAL BENEFITS RESULTING FROM AUDIT**

<u>Recommendation Reference</u>	<u>Description of Benefit</u>	<u>Amount and Type of Benefit</u>
A.	Economy and Efficiency. By breaking out the missile motors, the cost paid to the prime contractor to administer the subcontracts is eliminated.	Funds put to better use of \$77 million to the Navy Missile Procurement Appropriation for FY 1995 through 1998.
B.1.a. through d.	Economy and Efficiency. Duplication of effort eliminated by the shift of contract administration functions from the SSPO to the DPRO.	Monetary benefit is undeterminable until specific number of duplicate positions are determined.
B.2.	Economy and Efficiency. Budget adjustments to realign and reduce work years between the Navy and the Defense Logistics Agency and to assume total contract administration at contractors facilities.	Monetary benefit is undeterminable until specific number of duplicate positions are determined.
C.	Economy and Efficiency. Changing from a CPIF contract to a Fixed-Price contract, shifts the risk to the contractor rather than the Government and gives maximum incentives to minimize costs.	Monetary benefit is undeterminable until future contracts are negotiated.

This page was left out of original document

## APPENDIX C - PRIOR AUDIT REPORTS

### Office of the Inspector General, DoD

Audit Report No. 87-082, "HARPOON Weapon System," February 10, 1987.

Audit Report No. 87-110, "Acquisition of Landing Craft Air Cushion," April 3, 1987.

Audit Report No. 87-142, "Procurement of Ammunition Storage Racks for the M1A1 Tank," May 7, 1987.

Audit Report No. 87-155, "Procurement of the North Seeking Gyrocompass for the M981 Fire Support Team Vehicle," May 21, 1987.

Audit Report No. 87-156, "Acquisition of the AV-8B Aircraft," May 22, 1987

Audit Report No. 87-215, "Audit of the Component Breakout Program for Aircraft Systems," August 7, 1987.

Audit Report No. 87-216, "Survey of the Component Breakout Program for Aircraft Systems," August 7, 1987.

Audit Report No. 87-217, "Audit of the Component Breakout Program for Aircraft Systems," August 7, 1987.

Audit Report No. 87-221, "Survey of the Acquisition of the E-6A Take Charge and Move Out (TACAMO) Aircraft," August 17, 1987.

Audit Report No. 88-035, "Procurement of Defense Meteorological Satellite Program Satellites," October 16, 1987.

Audit Report No. 88-038, "Acquisition of the Standard Missile," October 20, 1987.

Audit Report No. 88-052, "Procurement of Crashworthy Crewseats for Helicopters," November 30, 1987.

Audit Report No. 88-086, "MK-46 Torpedo Program," January 11, 1988.

Audit Report No. 88-088, "Acquisition of the T45 Aircraft," February 24, 1988.

Audit Report No. 88-193, "Management of the Phoenix Missile Program," August 22, 1988.

**APPENDIX C - PRIOR AUDIT REPORTS (cont'd)**

Audit Report No. 89-042, "Acquisition of the Army's 5-Ton Truck," December 23, 1988.

Audit Report No. 89-104, "Acquisition of the MK-50 Torpedo Program," August 29, 1989.

Audit Report No. 89-108, "Component Breakout of the HARPOON Weapon System," September 14, 1989.

**General Accounting Office**

Report No. GAO/NSIAD-89-8, "Torpedo Procurement - Issues Related to the Navy's MK-50 Torpedo Propulsion System," January 1989, OSD Case No. 7785.

**Air Force Audit Agency**

Audit Report No. 7036316, "Acquisition of The F117-PW-100 Engine and Its Related Logistics Support," June 20, 1988.

## APPENDIX D - ACTIVITIES VISITED OR CONTACTED

### Office of the Secretary of Defense

Under Secretary of Defense for Acquisition, Washington, DC  
Assistant Secretary of Defense (Production and Logistics),  
Washington, DC  
Deputy Assistant Secretary of Defense (Strategic Programs),  
Washington, DC  
Director of Defense Procurement, Washington, DC  
Comptroller of the Department of Defense, Washington, DC

### Department of the Navy

Assistant Secretary of the Navy (Research, Development, and  
Acquisition), Arlington, VA  
Strategic Systems Programs Office, Arlington, VA

### Other Defense Activities

Director, Joint Chiefs of Staff, Washington, DC  
Defense Logistics Agency, Alexandria, VA  
Defense Contract Management Command, Alexandria, VA  
Defense Plant Representative Office (Lockheed Missile and Space  
Company Inc.), Sunnyvale, CA  
Defense Plant Representative Office (Hercules), Magna, UT  
Defense Plant Representative Office (Thiokol), Brigham City, UT  
Defense Contract Audit Agency, Alexandria, VA

### Non-DoD Activities

Lockheed Missile and Space Company, Inc., Sunnyvale, CA  
Hercules Missile, Ordnance, & Space Co., Magna, UT



This page was left out of original document

## APPENDIX E - REPORT DISTRIBUTION

### Office of the Secretary of Defense

Under Secretary of Defense for Acquisition  
Assistant Secretary of Defense (Program Analysis and Evaluation)  
Assistant Secretary of Defense (Production and Logistics)  
Director of Defense Procurement  
Comptroller of the Department of Defense

### Department of the Navy

Secretary of the Navy  
Assistant Secretary of the Navy (Research, Development, and Acquisition)  
Assistant Secretary of the Navy (Financial Management)  
Director, Strategic Systems Program Office

### Defense Agencies

Director, Joint Chiefs of Staff  
Defense Contract Audit Agency  
Defense Logistics Agency  
Defense Contract Management Command  
Defense Plant Representative Office, Lockheed Missile and Space Company Inc.  
Defense Plant Representative Office, Hercules  
Defense Plant Representative Office, Thiokol

### Non-DoD

Office of Management and Budget  
U.S. General Accounting Office, NSIAD Technical Information Center

Chairman and Ranking Minority Member of the following Congressional Committees and Subcommittees:

Senate Subcommittee on Defense, Committee on Appropriations  
Senate Committee on Armed Services  
Senate Committee on Governmental Affairs  
House Committee on Appropriations  
House Subcommittee on Defense, Committee on Appropriations  
House Committee on Armed Services  
House Committee on Government Operations  
House Subcommittee on Legislation and National Security, Committee on Government Operations

This page was left out of original document

**PART IV - MANAGEMENT COMMENTS**

Comptroller of the Department of Defense

Defense Logistics Agency

This page was left out of original document

COMPTROLLER OF THE DEPARTMENT OF DEFENSE COMMENTS

Final Report  
Page Number



OFFICE OF THE COMPTROLLER OF THE DEPARTMENT OF DEFENSE

WASHINGTON, DC 20301-1100

(Program/Budget)

17 AUG 1992

MEMORANDUM FOR DEPARTMENT OF DEFENSE INSPECTOR GENERAL

SUBJECT: Draft Quick-Reaction Report on the Acquisition  
Procedures for the Trident II (D-5) Missile (Project  
No. 2cD-0018.01)

The subject report includes an estimate of monetary benefits for breaking out procurement of missile motors of approximately \$157 million based on a procurement program of 48 missiles per year. This procurement rate exceeds that contained the President's budget and any savings calculation should be revised accordingly. This results in a savings estimate of \$75.1 million rather than \$157 million.

  
Bruce Dauer  
Director for Investment

Page 7  
Revised to  
reflect  
President's  
budget estimate  
of 24 missiles  
per year.

This page was left out of original document

## DEFENSE LOGISTICS AGENCY COMMENTS

Final Report  
Page Number



DEFENSE LOGISTICS AGENCY  
THE DEFENSE CONTRACT MANAGEMENT COMMAND  
CAMERON STATION  
ALEXANDRIA, VIRGINIA 22304-6190



IN REPLY  
REFER TO

DCMC-EP

20 August 1992

MEMORANDUM FOR ASSISTANT INSPECTOR GENERAL FOR AUDITING,  
DEPARTMENT OF DEFENSE

SUBJECT: Draft Quick-Reaction Report on the Review of the  
Trident II (D-5) Missile (Project No. 2CD-0018.01)

As requested, we have reviewed your draft report. We appreciate the opportunity you have offered us to verify the facts and issues.

Although you have incorporated many of our previous comments into this latest draft, it still contains a few inaccuracies that, if uncorrected, will detract from overall effectiveness of the final report (see enclosed detailed comments).

Our action officer for this report is Mr. David Robertson, DCMC-EP, (703) 617-7200 or DSN 667-7200. Please feel free to call him should you have any questions.

1 Encl

*for*   
ROBERT P. SCOTT  
Deputy

Revised per  
Comments.



**DEFENSE LOGISTICS AGENCY COMMENTS (cont'd)**

**Final Report  
Page Number**

**DETAILED COMMENTS  
DRAFT REPORT ON THE REVIEW OF THE TRIDENT II MISSILE  
(Project No. 2CD-0018.01)**

1. Page 16, Oversight at Contractor Sites: While we concur with the essence of the auditor's comments, this paragraph should to be changed to present the facts correctly.

**Revised.  
Page 9.**

The second sentence should be changed to read:

According to Defense Logistics Agency (DLA) correspondence there are 123 Strategic Systems Program Office (SSPO) personnel and 146 Defense Plant Representative Office (DPRO) personnel onsite at Lockheed, 43 SSPO personnel and 59 DPRO personnel onsite at Hercules, and 6 SSPO personnel and 138 DPRO personnel onsite at Thiokol (the number of SSPO onsite personnel listed is based on DLA estimates).

2. Page 17, Other Contractors and DoD Programs: While we concur with the essence of the auditor's comments, this paragraph should be changed to present the facts correctly.

The second sentence should be changed to read:

**Revised.  
Page 10.**

In addition to Lockheed Missile and Space Company, Sunnyvale, California; Hercules Missile, Ordnance, and Space Company, Magna, Utah; and Thiokol Corporation, Brigham City, Utah; which are addressed in this report, General Electric Company, Ordnance Systems Department, Pittsfield, Massachusetts; Rockwell International Corporation, Autonetics Division, Anaheim, California; Paramex Systems Corporation (Unisys), Great Neck, New York; and Westinghouse Electric Corporation, Sunnyvale, California; also have SSPO technical representatives at these plants.

3. Page 18, Working Group: The conclusion is unclear.

The last sentence should be changed to read:

**Revised.  
Page 10.**

Because of the significant number of SSPO technical representatives, we believe that the Office of the Assistant Secretary of Defense (Production and Logistics) should take immediate action to eliminate the potential for duplication between Defense Contract Management Command (DCMC) Contract Administration Offices and SSPO technical representatives by implementing DoD policy on technical representatives as outlined in DFARS 242.74.

**DEFENSE LOGISTICS AGENCY COMMENTS (cont'd)**

---

**Final Report**  
**Page Number**

**4. Page 19, Illustration of Benefits: The statements and conclusions are unclear.**

**Revised.**  
**Page 11.**

**The first sentence should be changed to read:**

**The estimated 123 SSPO personnel assigned to Lockheed and 43 SSPO personnel assigned to Hercules perform legitimate program and technical oversight functions. Additionally, the SSPO personnel assigned perform contract administration functions that should be delegated to the cognizant DPROs.**

**Revised.**  
**Page 11.**

**Insert a new second sentence to read:**

**By delegating all contract administration functions to the DPROs and eliminating duplication, there would be a reduction of some magnitude in the cost of performing oversight and contract administration.**

**Revised.**  
**Page 11.**

**The last sentence should be changed to read:**

**Because of the potential for significant savings that could result from consolidating contract administration functions and eliminating duplication, it is imperative the exact number of personnel required to perform these functions be determined and the functions, along with the personnel resources required, be transferred from SSPO to the DPROs consistent with the intent of the Defense Management Review (DMR).**

**5. Page 19, RECOMMENDATION FOR CORRECTIVE ACTION:**

**Recommendation 1 is unclear and should be changed to read:**

**Revised.**  
**Page 11.**

**We recommend that the Assistant Secretary of Defense (Production and Logistics) direct the SSPO and DCMC to jointly:**

- a. Determine the contract administration functions currently being performed by SSPO technical representatives.**
- b. Determine the exact number of workyears currently required by SSPO technical representatives to perform these functions.**
- c. Effect the transfer of all contract administration functions and resources (personnel) from SSPO to the cognizant DPROs consistent with the intent of the DMR.**

**Insert a new Recommendation 2 to read:**

DEFENSE LOGISTICS AGENCY COMMENTS (cont'd)

---

Final Report  
Page Number

Added to  
Recommendation  
1.d. Page 12

Renumbered  
Page 12

Additionally, we recommend the Assistant Secretary of Defense (Production and Logistics) direct the Strategic Systems Program Office to carefully assess the number of technical representatives required to perform noncontract administration program and technical oversight functions so as to keep the total onsite SSPO personnel to the minimum necessary.

Renumber the subsequent recommendation:

**AUDIT TEAM MEMBERS**

David K. Steensma, Director, Contract Management Directorate  
Patricia A. Brannin, Audit Program Director  
Macie J. Rubin, Audit Project Manager  
Henry P. Hoffman, Senior Auditor  
David H. Griffin, Auditor  
Eric A. Yungner, Auditor  
Robin R. Young, Administrative Support

## INTERNET DOCUMENT INFORMATION FORM

**A . Report Title:** Quick-Reaction Report on the Acquisition Procedures for the Trident 2 (D-5) Missile

**B. DATE Report Downloaded From the Internet:** 05/22/99

**C. Report's Point of Contact: (Name, Organization, Address, Office Symbol, & Ph #):**  
OAIG-AUD (ATTN: AFTS Audit Suggestions)  
Inspector General, Department of Defense  
400 Army Navy Drive (Room 801)  
Arlington, VA 22202-2884

**D. Currently Applicable Classification Level:** Unclassified

**E. Distribution Statement A:** Approved for Public Release

**F. The foregoing information was compiled and provided by:**  
DTIC-OCA, Initials: \_\_VM\_\_ Preparation Date 05/22/99

The foregoing information should exactly correspond to the Title, Report Number, and the Date on the accompanying report document. If there are mismatches, or other questions, contact the above OCA Representative for resolution.